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Scandosorbus (Rosaceae), a new generic name for *Sorbus intermedia* and its hybrid

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A new generic name, *Scandosorbus* Sennikov, is validly published to replace *Borkhausenia* Sennikov & Kurtto 2017, which is an illegitimate later near-homonym of *Borckhausenia* Roth 1800. New combinations are provided for the only species of the genus (*B. intermedia*) and its hybrid with *Sorbus aucuparia*.

Introduction

While reading an excellent book on the eponymy in generic names, of which the second edition (Burkhardt 2018) has recently been published, I realised that the generic name *Borkhausenia* Sennikov & Kurtto (Sennikov & Kurtto 2017) is a near homonym of an earlier validly published name, *Borckhausenia* Roth (Roth 1800). This oversight resulted from my uncritical use of electronic databases (International Plant Name Index, IPNI; Index Nominum Genericorum, ING), in which orthographical variants, when different at least in a single letter, cannot be retrieved using standard requests. Consequently, *Borkhausenia* is to be treated as a later homonym and an illegitimate name under Art. 53.2 (with Ex. 9) of *International Code of Nomenclature for algae, fungi, and plants* (Turland *et al.* 2018) because the two generic names differ in a single letter and commemorate the same person, thus being confusingly similar.

Historical and taxonomic background

Borkhausenia Sennikov & Kurtto (Rosaceae, Malinae) was proposed to accommodate a single apomictic species of *Sorbus s. lato*, *S. intermedia* (Ehrh.) Pers., and its only hybrid, *S.* × *liljeforsii* T.C.G. Rich (Sennikov & Kurtto 2017). This species is native to Estonia, Denmark, Finland (Åland Islands), Germany, Latvia, Norway and Sweden and has naturalised occurrences in several other countries (Belgium, Czech Republic, mainland Finland, France, Ireland, Netherlands, Russia (Kaliningrad Region), United Kingdom). Its distribution was mapped by Kurtto *et al.* (2018).

The need for establishing a new genus appeared from the taxonomic disentangling of *Sorbus*, which was repeatedly found to be polyphyletic in phylogenetic studies (Campbell *et al.* 1995, 2007, Lo & Donoghue 2012). On the basis of the phylogenetic information and morphological evidence, Sennikov and Kurtto (2017) rec-

ognized four main genera in *Sorbus s. lato*, i.e. *Aria*, *Cormus*, *Sorbus s. stricto*, and *Torminalis*, and two genera that arose from intergeneric hybridization in the past, i.e. *Chamaemespilus* (presumably *Aria* × *Torminalis*) and *Micromeles* (presumably *Aria* × *Sorbus s. stricto*). According to that evidence, two pairs of simple-leaved genera (*Aria* and *Torminalis*) and pinnate-leaved genera (*Cormus* and *Sorbus s. stricto*) are distantly positioned on the phylogenetic tree and may not be closely related to each other, although the relationship within the pairs may be truly sister. Since the morphological evidence supports the separation of four segregates, all these entities were accepted at the generic rank by Sennikov and Kurtto (2017), in agreement with the established tradition.

Intergeneric hybridization within the tribe *Malinae* is extensive. According to Robertson *et al*. (1991), it affects 24 of 28 genera they recognized in the tribe. As they stated, this hybridization "seems to reflect weak overall barriers to hybridization rather than indicate evolutionary relationships". Among the generic segregates of *Sorbus s. lato*, all but *Cormus* are capable to spontaneously hybridize. These hybrids have been traditionally described and classified under *Sorbus s. lato* until Mezhensky (in Mezhensky *et al*. 2012) provided nothogeneric names with selected species-level combinations. However, nothogeneric nomenclature need not be applied to established taxa of hybrid origin, such as apomictically stabilized hybridogenous species of *Sorbus s. lato* (Art. H.3.3, Note 1 in Turland *et al*. 2018). This is a practical consequence of the rule (Art. H.4.1 in Turland *et al*. 2018), which requires that a nothotaxon has to be circumscribed so as to include all individuals that are derived from crosses between particular parent taxa. Since many apomictic taxa at the level of species share the same parents, designating them as nothotaxa would lead to the collapse of their nomenclature and potentially to synonymization of many of these entities (as advocated e.g. by Zieliński & Vladimirov 2013) in spite of their morphological recognizability and biological separation. For this reason, a new generic nomenclature was established for hybridogenous genera of *Sorbus s. lato* by Sennikov and Kurtto (2017).

Sennikov and Kurtto (2017) established hybridogenous genera for each group of spontaneous, stabilised apomictic species that arose from hybridization between segregate genera of *Sorbus s. lato*. One of these, *Borkhausenia*, was a product of crosses between species of three genera (*Aria* × *Sorbus* × *Torminalis*); its name was dedicated to Moritz Balthasar Borkhausen (1760–1806), a German dendrologist who contributed to the development of the early system of *Malinae*. Borkhausen's name was spelled differently, shifting with time from the archaic "Borckhausen" to more simplistic "Borkhausen" (Stafleu & Cowan 1976). Two early eponyms honoured Borkhausen, *Borckhausenia* Roth (Roth 1800) and *Borckhausenia* G. Gaertn., B. Mey. & Scherb., *nom. illeg*. (Gaertner *et al*. 1801). Reichenbach (1841) attempted to correct the spelling of the latter to "Borkhausenia" but that correction was not effective and the later spelling variant cannot be treated as validly published under Art. 61.1 in Turland *et al*. (2018). This orthographic variant was not recorded in *Index Kewensis* but was noted in Stafleu and Cowan (1976).

Since the illegitimacy of *Borkhausenia* Sennikov & Kurtto went slipping through the cracks, this name was accepted in *Atlas Florae Europaeae* (Kurtto *et al*. 2018), *Plants of the World online* (http://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:77164940-1) and *Finnish Biodiversity Information Facility* (https://laji.fi/taxon/MX.4976857). Hereby a new generic name with new combinations is provided to establish legitimate nomenclature for monophyletic taxa in *Sorbus s. lato*.

Nomenclature

Scandosorbus Sennikov, *nom. nov.*

Sorbus subgen. *Triparens* M. Lepší & T.C.G. Rich, New J. Bot. 4: 11. 2014. — *Borkhausenia* Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fennica 93: 44. 2017, *nom. illeg*., *non Borckhausenia* Roth, Catal. Bot. 2: 56. 1800. — TYPE: *Sorbus intermedia* (Ehrh.) Pers.

ETYMOLOGY. The generic name is derived from 'Scandinavia' and '*Sorbus*', thus indicating a group of *Sorbus s. lato* whose distribution is centred in (southern) Scandinavia. The gender of the generic name is necessarily feminine (Art. 62.2, Turland *et al*. 2018).

PHYLOGENETIC ORIGIN. *Aria* (Pers.) Host × *Sorbus* L. × *Torminalis* Medik. (Robertson *et al*. 2010).

Scandosorbus intermedia (Ehrh.) Sennikov, *comb. nova*

Pyrus intermedia Ehrh. in Hirschfeld, Gartenkalender 4: 197. 1784. — *Sorbus intermedia* (Ehrh.) Pers., Syn. Pl. 2: 38. 1806. — *Borkhausenia intermedia* (Ehrh.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fennica 93: 44. 2017. — TYPE: Sweden. "Upsaliae" [cultivated in Upsala], [1773–1776], *F. Ehrhart* [Arbores, Frutices et Suffrutices No. 94] in Herb. Smith 897.29 (LINN-HS 897.29.1, lectotype designated by Sennikov & Kurtto 2017; isolectotype MW).

NOTE. The lectotype collection of *Pyrus intermedia* was distributed as part of Ehrhart (1787–1793).

Scandosorbus* × *liljeforsii (T.C.G. Rich) Sennikov, *comb. nova*

Sorbus × *liljeforsii* T.C.G. Rich, Nordic J. Bot. 25: 339. 2007. — *Borkhausenia* × *liljeforsii* (T.C.G. Rich) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fennica 93: 46. 2017. — TYPE: Sweden. Västergötland: Finnerödja, Brinken, 10 June 1920, *J.A.O. Skårman* (UPS, holotype).

ORIGIN. *Scandosorbus intermedia* × *Sorbus aucuparia* (Rich 2008).

Further synonymy and notes on type designations and nomenclature may be found in Sennikov and Kurtto (2017).

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